Table A-2. Rationale for Estimating Chloride Loads, Discharge Flows, and Ambient Concentration and Flow under Alternative Conditions Based on Typical Conditions.

Standard conditions

Documented in Table A-1.

Extreme low flow ("7Q10")

Concentration

Assumed identical to standard conditions.

Flow volume

Assumes no discharges into the waterbody other than POTWs at standard conditions (groundwater discharge, urban non-storm runoff, agricultural drainage, etc. are zero).

Losses from stream channel due to groundwater recharge, agricultural withdrawals, etc. continue at volumes of typical conditions, except where limited by lack of available flow.

Typical low flow (50th percentile of historical data)

Concentration

Assumed identical to standard conditions.

Flow volume

In-stream flow calculated at three gauging stations as 50th percentile of historical flow, as described in Section 8.

Model mass balance used to compute in-stream flow at other locations.

Groundwater discharge, agricultural discharge, urban non-storm runoff reduced in proportion, using best professional judgment, so that modeled in-stream flow is consistent with modeled flow.

POTW discharge flows remain at volume of standard conditions.

Maximum non-storm conditions ("routine critical conditions")

Concentration

Assumed identical to standard conditions.

Flow volume

POTW discharge flows at standard conditions.

Groundwater discharge, non-storm runoff, some agricultural discharges, and miscellaneous surface and sub-surface flows assumed at maximum flow; calculated using mass balance model to be consistent with statistically calculated maximum non-storm flow using historical data at three USGS gauges, as described in Appendix A.

Table A-2, Continued. Rationale for Estimating Chloride Loads, Discharge Flows, and Ambient Concentration and Flow under Alternative Conditions Based on Typical Conditions.

Storm conditions

Concentration

POTW, groundwater, all other discharges as in standard conditions.

Urban runoff assumed 20 mg/L, average of Ballona Creek data for 1999.

Flow volume

All point source, subsurface, and miscellaneous discharges assumed at maximum non-storm conditions.

Runoff estimated by reach using mass balance model, consistent with average historical storm flows measured at three gauging stations.

Drought

Concentration

POTW discharge concentration assumed to increase by 20% due to increase in imported water supply.

In-stream concentration calculated using mass balance model.

Flow volume

POTW discharge flows remain at volume of standard conditions.

Groundwater discharge and pumped groundwater flow reduced to zero.

In-stream flow calculated using mass balance model; other discharges (urban non-storm runoff, etc.) reduced according to best professional judgment to be consistent with calculated in-stream flows.

Immediate post-drought, high-volume conditions ("drought critical conditions")

Concentration

POTW discharge concentration assumed to increase by 20% due to assumed continued high imported water supply.

Groundwater discharge concentration assumed to increase 20% due to concentrating effect during drought.

In-stream concentration calculated using mass balance model.

Flow volume

POTW discharge flows remain at volume of standard conditions.

Groundwater discharge, pumped groundwater flow, non-storm runoff, etc. increased to same as "maximum non-storm flow" conditions, as worst-case scenario of post-drought flows.

In-stream flow calculated using mass balance model, same as in "maximum non-storm flow" conditions.